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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/755,282	01/13/2004	M. George George	200311859-1	1629

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FORT COLLINS, CO 80527-2400

EXAMINER

ZHE, MENG YAO

ART UNIT	PAPER NUMBER
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2195

NOTIFICATION DATE	DELIVERY MODE
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02/07/2008

ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary

Application No.

10/755,282

Applicant(s)

GEORGE, M. GEORGE

Examiner

MengYao Zhe

Art Unit

2195

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 13 January 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-36 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-36 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 13 January 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 1/13/2004.
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- ☐ Notice of Informal Patent Application
- ☐ Other: _____

DETAILED ACTION

1. Claims 1-36 are presented for examination.

Claim Rejections - 35 USC § 101

2. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 27, 33-34 are rejected because the claimed invention, appearing to be comprised of software alone without claiming associated computer hardware required for execution, is not supported by either a specific and substantial asserted utility (i.e., transformation of data) or a well established utility (i.e. a practical application).

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 31-36 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

A. The following claim languages are unclear and indefinite:

- i) Claims 31-32, it is uncertain if these claims are system claims or method claims.
- ii) Claims 33-34, it is unclear if these claims are software claims or method claims.
- iii) Claims 35-36, it is uncertain if these claims are storage media claims or software claims.

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1, 4, 8-10, 12, 15-17, 19, 21, 24, 26-36 are rejected under 35 U.S.C. 102(e) as being anticipated by Elmendorf et al., Patent No. 7,031,989 (hereafter Elmendorf).

5. As per claims 1, 15, 16, 17, 19, 21, 24, 26, 27, 28, 31-36, Elmendorf teaches a method of replacing an implementation module which is being accessed through an

interface module by a plurality of threads from an application (Column 2, lines 12-22), including the steps of:

i) creating a plurality of private variable corresponding to the plurality of threads (Column 6, lines 29-32);

ii) setting a replace module variable (Column 8, lines 51-58);

iii) when the replace module variable is set:

a. blocking threads from entering the implementation module (Column 8, lines 51-58);

b. when all the private variables are in a reset state, replacing the implementation module (Column 6, lines 55-60: when each thread or context catches to the freshness indicator, which is the reset state, the old data object is removed, and is replaced with the new data object; Column 7, lines 10-47);

wherein the private variable is never in a reset state when the thread is within the implementation module (Column 7, lines 25-40: as long as a thread is accessing the old data object, or implementation module, its private variable will never get caught up to the new freshness indicator, e.g. the variable will never be in a reset state.), wherein the use of locks within the performance path of the interface module is not required, and wherein threads and corresponding private variables are created and destroyed dynamically (Column 1, lines 55-65).

6. As per claim 4, Elmendorf teaches wherein each counter is incremented when the corresponding thread enters the implementation module and decremented when the thread exits the implementation module (Column 8, lines 30-37).
7. As per claim 8, Elmendorf teaches wherein each private variable is modifiable by that variable's corresponding thread (Column 6, lines 29-32).
8. As per claim 9, Elmendorf teaches wherein each private variable is readable by all the threads (Column 6, lines 29-32).
9. As per claim 10, Elmendorf teaches wherein the implementation module is a Library (Column 1, lines 25-32).
10. As per claim 12, Elmendorf teaches wherein a thread performs the step (iii) (Column 6, lines 29-32).
11. As per claim 29, Elmendorf teaches wherein the processor is further arranged for resetting the replace module variable when the implementation module has been replaced (Column 8, lines 59-63).
12. As per claim 30, Elmendorf teaches wherein the processor is further arranged

for unblocking the threads when the replace module variable has been reset (Column 8, lines 59-63).

Claim Rejections - 35 USC § 103

13. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

14. Claims 2, 3, 5-7, 11, 13-14, 18, 20, 22-23, 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Elmendorf et al., Patent No. 7,031,989 (hereafter Elmendorf).

15. As per claims 2 and 3, Elmendorf does not specify whether if the implementation module is non-recursive or recursive. However, it would have been obvious to one having ordinary skill in the art at the time of the applicant's invention to have the module be any type of module including non-recursive and recursive, since this does not contribute to the significance or the functioning of the applicant's invention.

16. As per claim 5, Elmendorf does not specifically teach wherein the private variable is in a set state when the value of the counter is above zero and the private variable is in a reset state when the value of the counter is zero or below.

However, it would have been obvious to one having ordinary skill in the art at the time of the applicant's invention to see that the private variable may be set or reset however one chooses, and that setting it when the counter value is above zero is just one obvious way of setting the variable.

17. As per claim 6, Elmendorf teaches wherein each counter is only writable by its corresponding thread (Column 6, lines 29-32).

Elmendorf does not teach that each counter is readable only by its corresponding thread. However, since private registers that only its thread may access or read has been existent at the time of the applicant's invention, it would have been obvious to one having ordinary skill in the art at the time of the applicant's invention to have the counter such that it may only be read by its corresponding thread.

18. As per claim 7, Elmendorf does not specifically teach wherein step (iii) is performed by the interface module. However, it would have been obvious to one having ordinary skill in the art at the time of the applicant's invention to have the interface module to perform step (iii) since the rights of access to the implementation module is controlled by the interface module.

19. As per claim 11, 18, Elmendorf does not specifically wherein the private variables and the replace module variable are defined as cache coherent. However, it would have been obvious to one having ordinary skill in the art at the time of the applicant's invention design the variables to be cache coherent so that consistency and validity of all data is maintained.

20. As per claims 13, 20, Elmendorf does not specifically teach wherein a mutual exclusion primitive is used within step (iii) to ensure that only a single thread performs steps (a) and (b). However, it would have been obvious to one having ordinary skill in the art at the time of the applicant's invention to have only a single thread performing those steps in order to avoid conflict among multiple threads.

21. As per claim 14, Elmendorf teaches wherein checking of flags within an array is not required in the performance path of the interface module (Column 8, lines 25-57).

22. As per claim 22, Elmendorf does not specifically teach wherein the registration of each private variable occurs when the corresponding thread is created. However, it would have been obvious to one having ordinary skill in the art at the time of the applicant's invention to create all relevant variables related to the thread as soon as the thread is created so that they are available to usage as thread performs its tasks.

23. As per claim 23, Elmendorf does not specifically teach wherein the registration of each private variable occurs when the corresponding thread enters the interface module for the first time. However, it would have been obvious for one having ordinary skill in the art at the time of the applicant's invention to register the private variable only when it's needed, which happens when it's corresponding thread enters the interface module.

24. As per claim 25, Elmendorf does not specifically teach wherein the resource is the kernel or operating system of a machine upon which a process containing the threads is operating and the action is the migration of the process to a new machine. However, Elmendorf does teach that the modules are loaded and unloaded in processing systems dynamically (Column 1, lines 33-40, lines 55-60), therefor it would have been obvious for one having ordinary skill in the art at the time of the applicant's invention to have the modules be loaded onto a new machine, where the machine contain resources such as a kernel since most computer processing systems have kernels and that new programs are always needed to be loaded onto them for different processing purposes.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MengYao Zhe whose telephone number is 571-272-

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6946. The examiner can normally be reached on Monday Through Friday, 7:30 - 5:00 EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Meng-Ai An can be reached on 571-272-3756. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



LEWIS A. BULLOCK, JR.
PRIMARY EXAMINER